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**Abstract Submission**

**SCR/SNCR OPTIMIZATION WITH IN-SITU AMMONIUM BISULFATE FOULING MEASUREMENT**

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**Abstract:**

Ammonia slip has long been considered one of the primary variables relating to overall performance of both SCR and SNCR NO<sub>x</sub> control processes. However, because ammonium bisulfate generation is related not only to ammonia slip, but the presence of SO<sub>3</sub>, moisture, and excess O<sub>2</sub> as well, its presence cannot be accurately predicted by an ammonia slip instrument alone.

A novel technology has been introduced for the direct measurement of ammonium bisulfate related fouling tendencies. This instrument directly measures and reports both the formation temperature and the fouling potential of the ammonium bisulfate based fouling compounds.

Data will be presented on the ammonium bisulfate instrument's response, under full scale plant conditions, to varying levels of ammonia slip, its sensitivity to extremely low levels of ammonia, correlation between detected ammonium bisulfate activity and site specific air heater fouling as well as correlation between detected ammonium bisulfate activity and ammonia-on-ash concentrations.

Preliminary results will also be presented on application of this probe system, using a modified temperature range and control algorithm, to on-line detection of SO<sub>3</sub> following the air preheater. This information could be useful in measurement of potential corrosion effects due to formation of sulfuric acid condensate, and in guiding mitigation technology for remediation of blue plume formation.

The paper will include performance results from several US generating stations operating either SCR and/or SNCR post combustion NO<sub>x</sub> systems.